

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

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JET PROPULSION LABORATORY, CALIFORNIA INSTITUTE OF TECHNOLOGY
FOR THE LANGLEY RESEARCH CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ATLAS OF MARS
1:1,000,000 TOPOGRAPHIC SERIES
CAPRI REGION
M 1M-4/39 R, 1977
I-1026

NOTES ON BASE

This is one map in a set of topographic map sheets covering area of special interest on Mars at nominal scale of 1:1,000,000 and 1:250,000 (Batson, 1975; Batson, 1976). The major source of map data was the Mariner 9 television experiment (Mausky and others, 1970).

ADOPTED FIGURE

The figure of Mars used for the computation of the map projection is an oblate spheroid (flattening of 1/192) with an equatorial radius of 3393.4 km and a polar radius of 3375.7 km.

PROJECTION

The transverse Mercator projection is used for this sheet, with a scale of 1:1,000,000 at 39° longitude. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1971). Latitudes are areographic (de Vasconcelos and others, 1973).

CONTROL

Planimetric control is provided by photogrammetric triangulation using Mariner 9 pictures (Davies, 1975; Davies and Arthur, 1973) and the radio-tracked position of the spacecraft. The first meridian passes through the crater Airy-O (lat 5.10°S) within the crater Airy. No simple statement is possible for the precision, but local consistency is 2 km.

MAPPING TECHNIQUE

A mosaic of rectified Mariner 9 pictures was assembled at 1:1,000,000.

Shaded relief was copied from the mosaic and portrayed with uniform illumination with the sun to the west. Many Mariner 9 pictures besides those in the base mosaic were examined to improve the portrayal (Levinthal and others, 1973; Green, et al., 1975; Inge and Bridges, 1976). The shading is not generalized and may be interpreted with nearly photographic reliability (Inge, 1973).

Shaded relief analysis and representation were made by Jay L. Inge.

COLOR

No attempt was made on the map to precisely duplicate the color of the Martian surface, although the color used does approximate it.

NOMENCLATURE

Names on this sheet are approved by the International Astronomical Union (1974, 1977), except the following: Hydrates Foss. Named craters bearing double letters in parentheses are designated by the same letters on the 1:5,000,000 Margariter Sinus sheet which covers this area. Double and triple letter designations refer to position on the map and are derived from a grid based on equidistant meridians and parallels; the alphabet (I and O omitted) runs in the direction of increasing longitude (W) and latitude (N). The complete designation of a crater is the name of the quadrangle followed by a double or triple letter. The prefix MAR identifying the Margariter Sinus sheet is part of the complete designation but, for brevity, is not shown on most craters.

M 1M-4/39 R: Abbreviation for Mars 1:1,000,000 series center of sheet, 4°S latitude, 39° longitude; shaded relief map, R.

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